GO-GRASS

Grass-based circular business models
for rural agri-food value chains

Alternative grassland uses in the EU bioeconomy framework

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BIOECONOMY & GRASSLANDS

RESOURCE

- Avaliability
- Quality

USES

- Feed
- Energy
- Fertilizer
- Paper and Carton

BIOECONOMY & GRASSLANDS

GO-GRASS

RESOURCE

Avaliability

Quality

USES

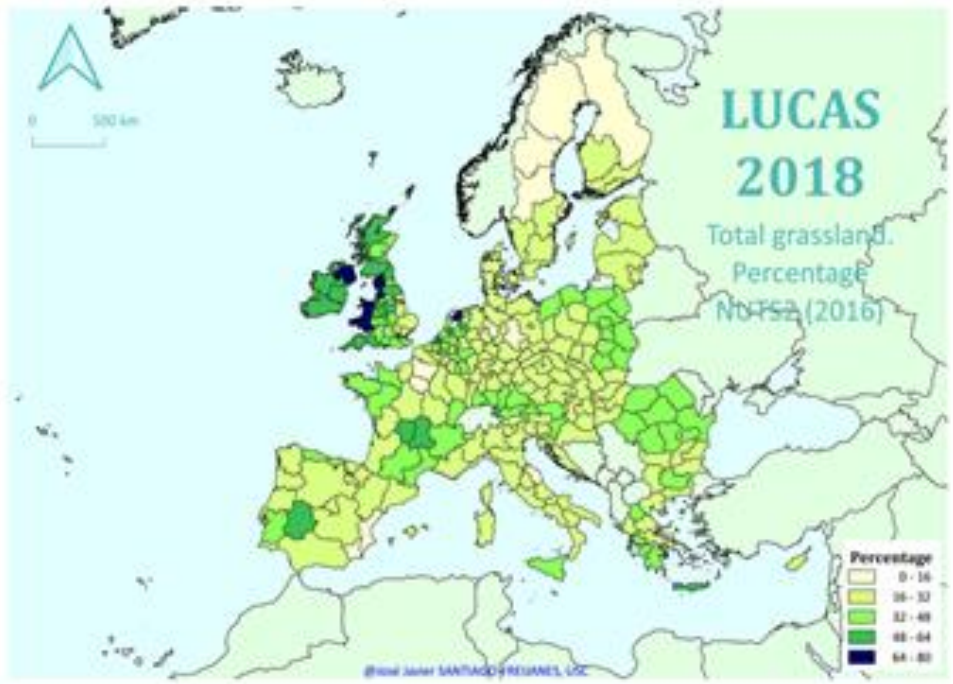
Feed

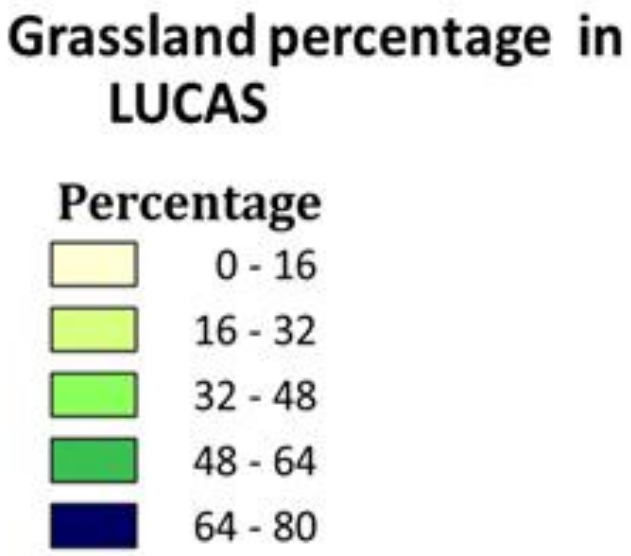
Energy

Fertilizer

Paper and Carton

20% of the EU area // the 50% of the agricultural land in Europe





GRASSLAND EXTENT

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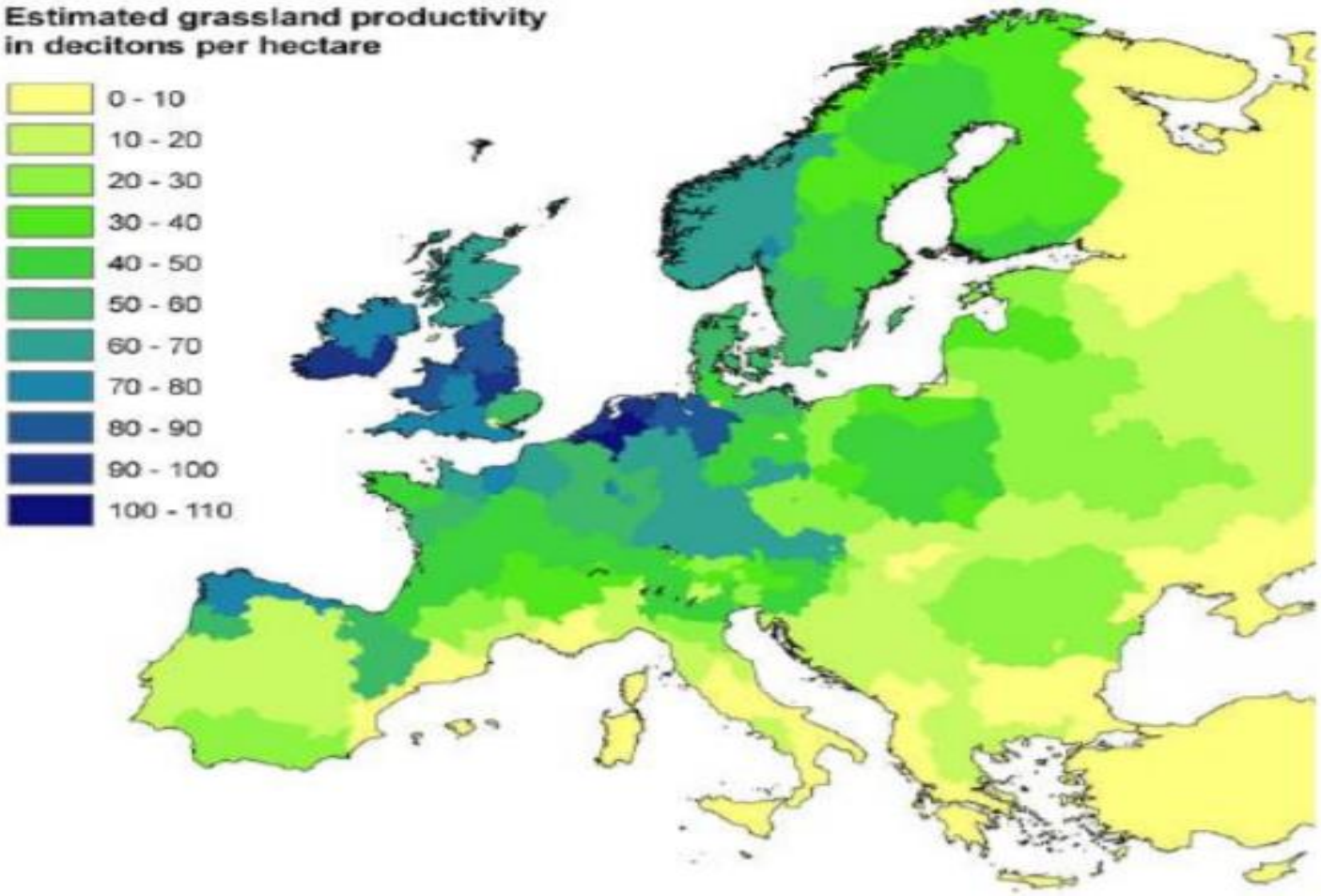

GRASSLAND PRODUCTIVITY

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Grasslands types

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Temporary grasslands

cultivated for crop production

Permanent grasslands

not cultivated for 5 years or more

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Temporary grasslands as a resource…… compared with permanent grasslands…

↑ Predictable production

↑ Productivity per unit of land

↑ Quality homogeneity

↑ Competition for the land for arable crops

↓ Less resilient

↓ Soil resource depletion

More suitable for alternative use

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GO-GRASS

CAP DEFINITION
PERMANENT GRASSLAND OR PERMANENT PASTURE

"land used to grow grasses or other herbaceous forage naturally (self-seeded) or through cultivation (sown) and that has not been included in the crop rotation of the holding for ***five years*** *or more****; it may include other species such as shrubs and/or trees which can be grazed*** *provided that the grasses and other* ***herbaceous forage remain predominant*** *as well as, where Member States so decide, land which can be grazed and which forms part of* ***established local practices*** *where grasses and other herbaceous forage are traditionally not predominant in grazing areas*

So… shrublands if grazed are permanent grasslands

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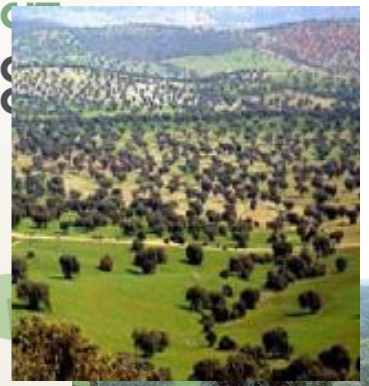
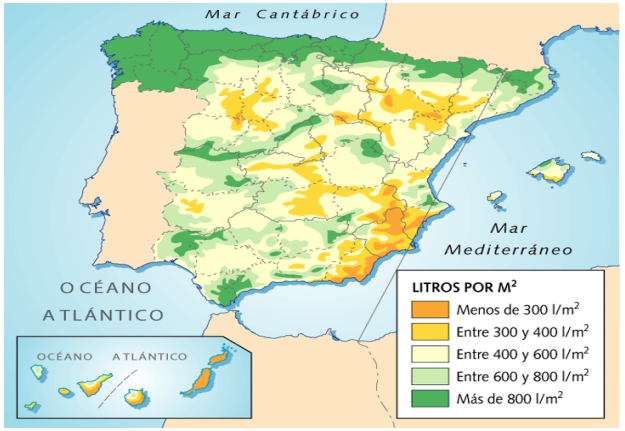
Acid soils
Water pH < 4.5

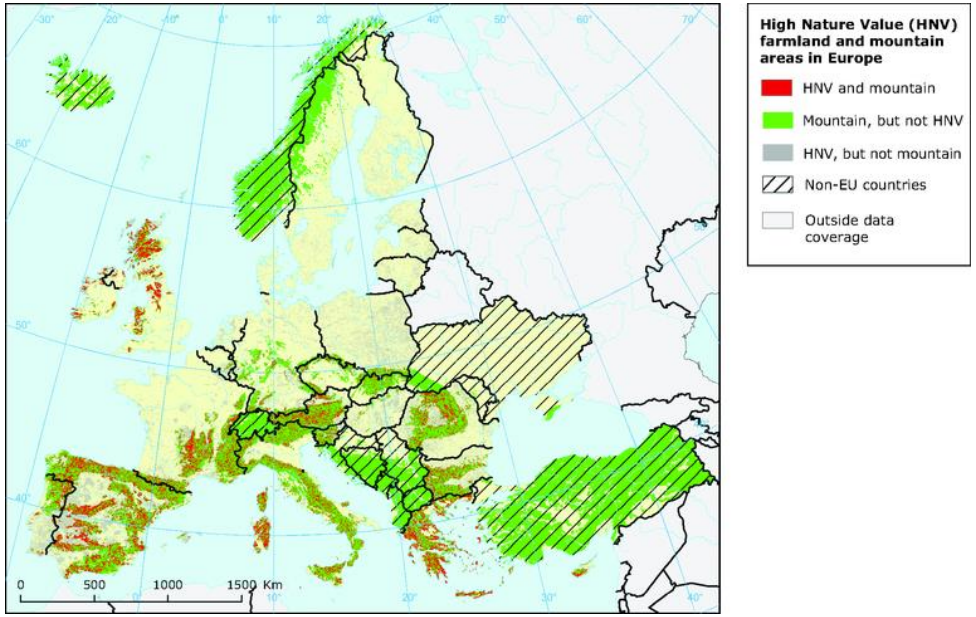




Basic soils
Water pH > 8

Other areas with available grass.....

HNV // PARKS



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Other areas with available grass.....

Abandoned grassland as percentage of total grassland

- 0.0% - 1.0%
- 1.0% - 2.5%
- 2.5% - 5.0%
- 5.0% - 10.0%
- 10.0% - 40.0%

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BIOECONOMY & GRASSLANDS

GO-GRASS

RESOURCE

Avaliability

Quality

USES

Feed

Energy

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Feed

PRESERVED

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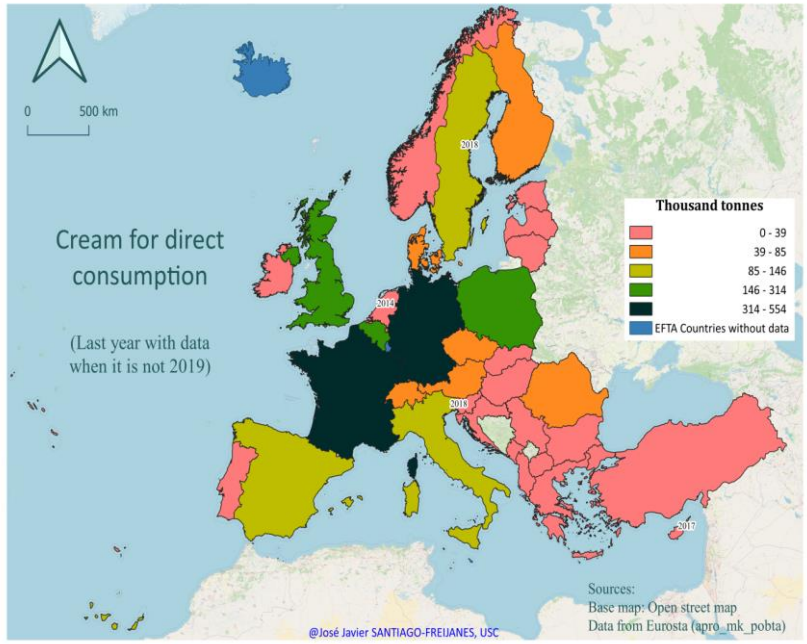

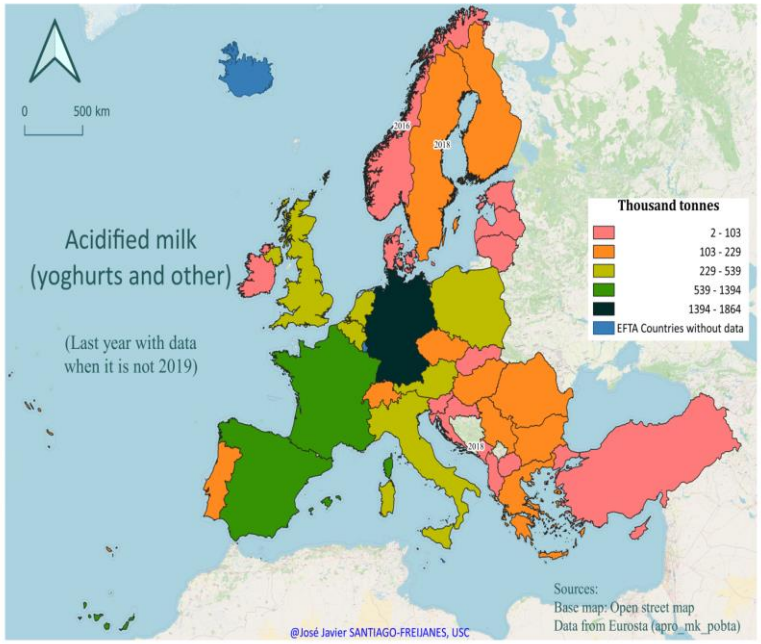

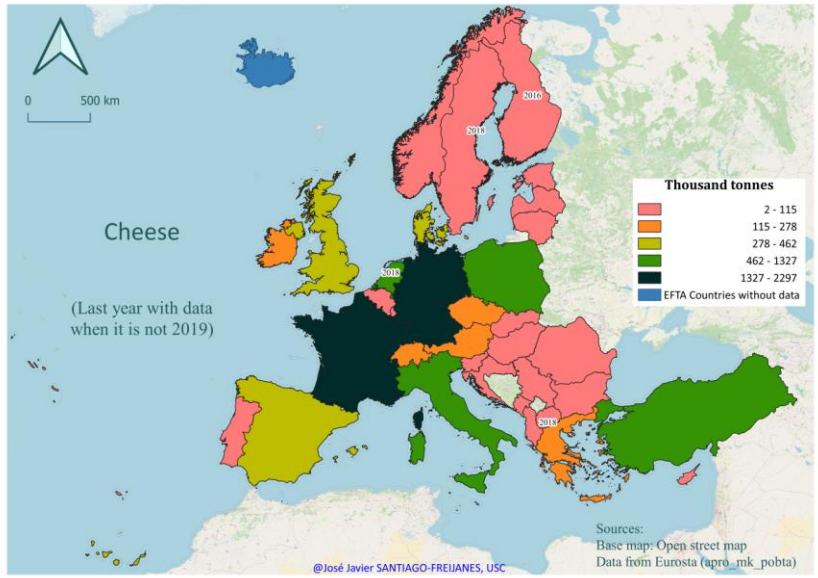

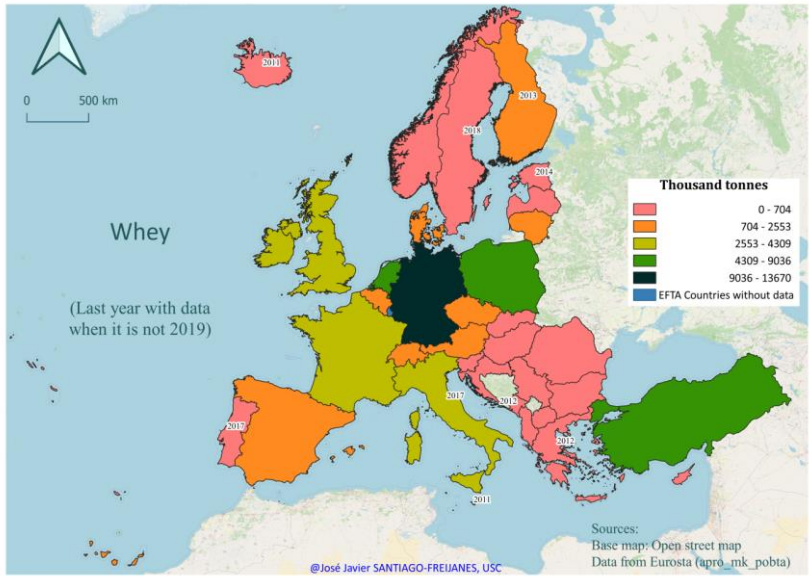

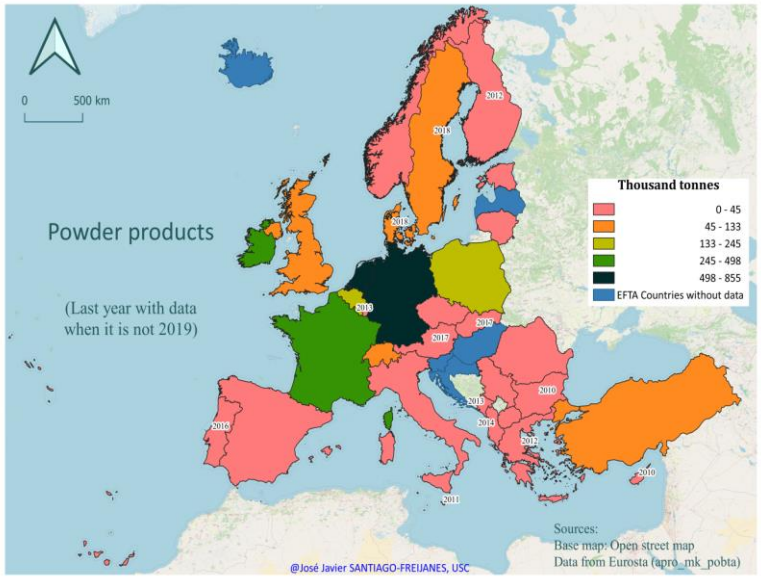

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Grass for feed & Bioeconomy

- Ensuring food and nutrition security 
- Strengthening European competitiveness and creating jobs

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ENERGY

BIOGAS PLANT

UPGRADING

COMBINED HEAT AND POWER PLANT

DIGESTATE

BIOMETHANE

HEATING

ELECTRICITY

FUEL

GAS NETWORK

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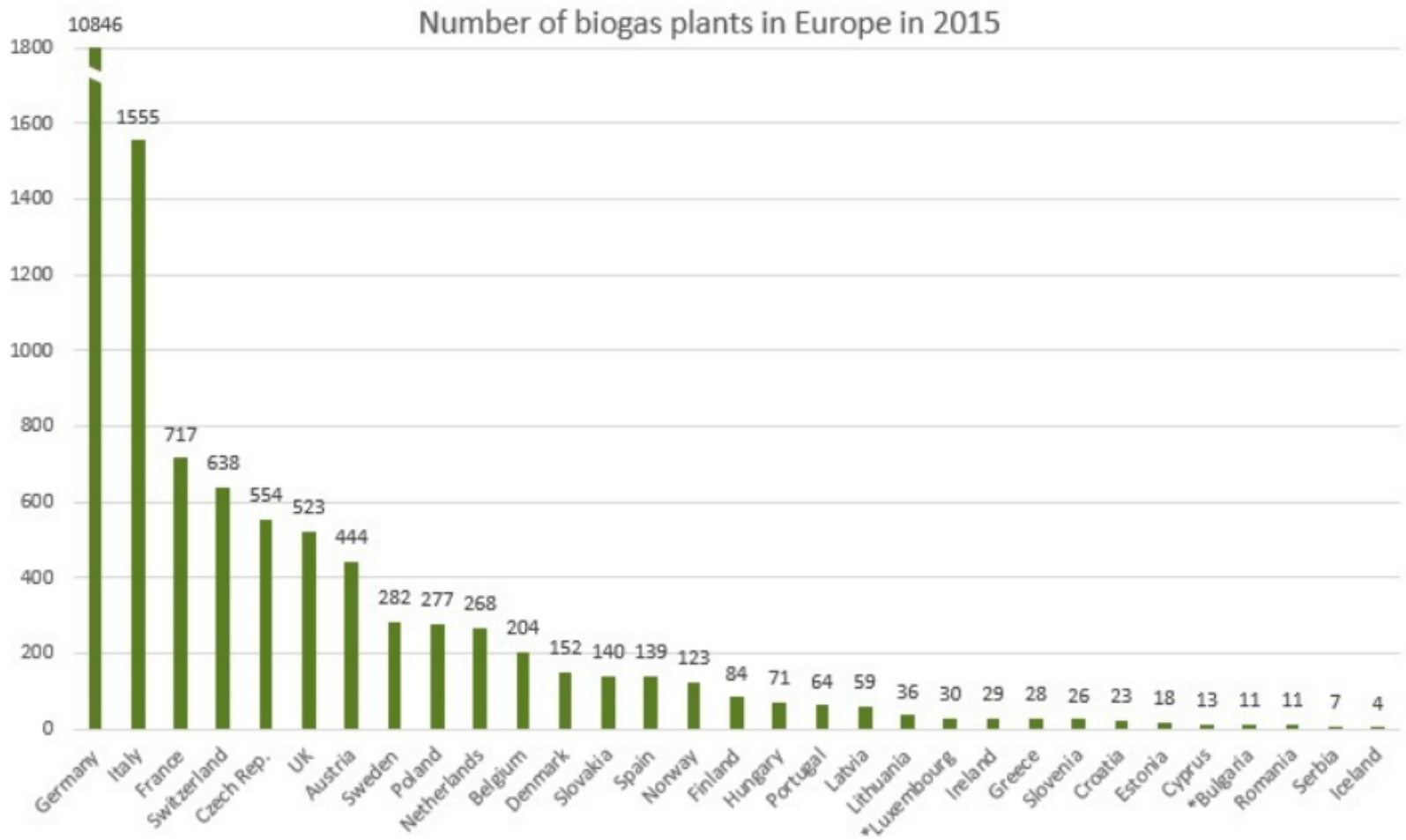
BIOGAS PLANTS



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BIOMETHANE PLANTS

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Energy for feed & Bioeconomy

- Reducing dependence on non-renewable resources

- Mitigating and adapting climate change

- Strengthening European competitiveness and creating jobs

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Amendments and Fertilizers

Admentment

Organic: biochar

Fertilizer

Phosphorous from biochar

Digestate from biogas production

Animal bedding: N, P and K (mixed with manure)

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Biochar

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P

Organic matter

PYROLYSIS

Animal bedding

Mechanical treatment

Mixing / Enrichment

Higher N content than digestates

Higher P content

Higher K content

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Digestate

0.2-0.4 N (80% NH_4)

0.1-0.3 P

pH 7.5-8.0

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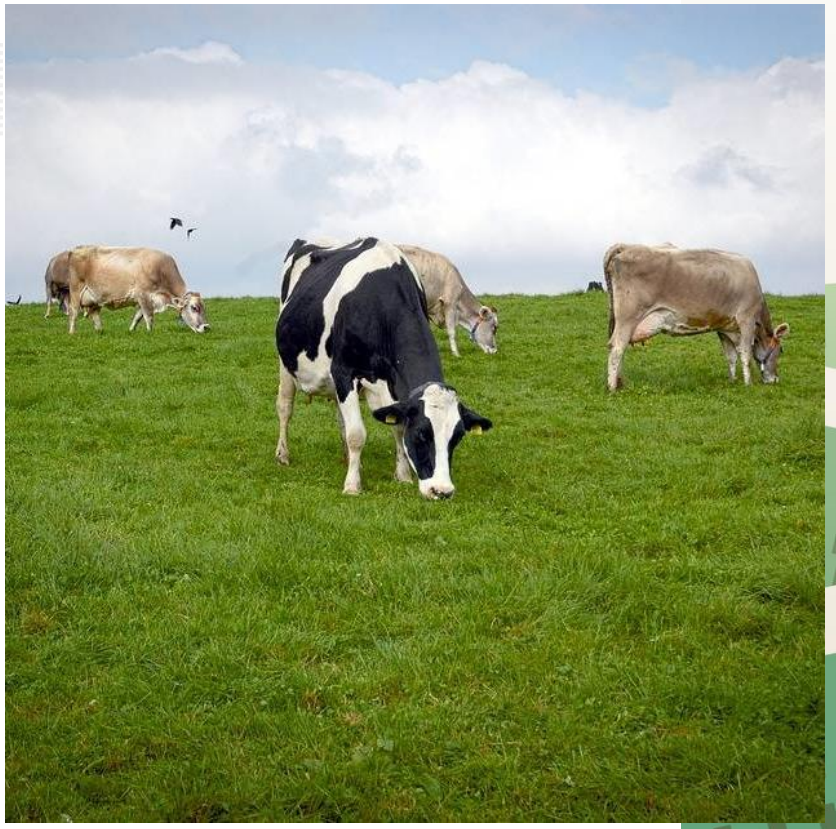
VALUE AS FERTILIZER

+ Composition (annual/permanent; harvest time, management)
    + Total amount of nutrients
    + Total amount of non-degradable material limiting mineralization (nutrients availability)
+ Total proportion of
    Mineral (NH_4 and NO_3)
    Labile macronutrients (available the first year)
    Residue macronutrients (not available in the first year)

Fertilizer & Bioeconomy

- Ensuring food and nutrition security 
- Managing natural resources sustainably 
- Reducing dependence on non-renewable resources 
- Mitigating and adapting climate change 
- Strengthening European competitiveness and creating jobs 



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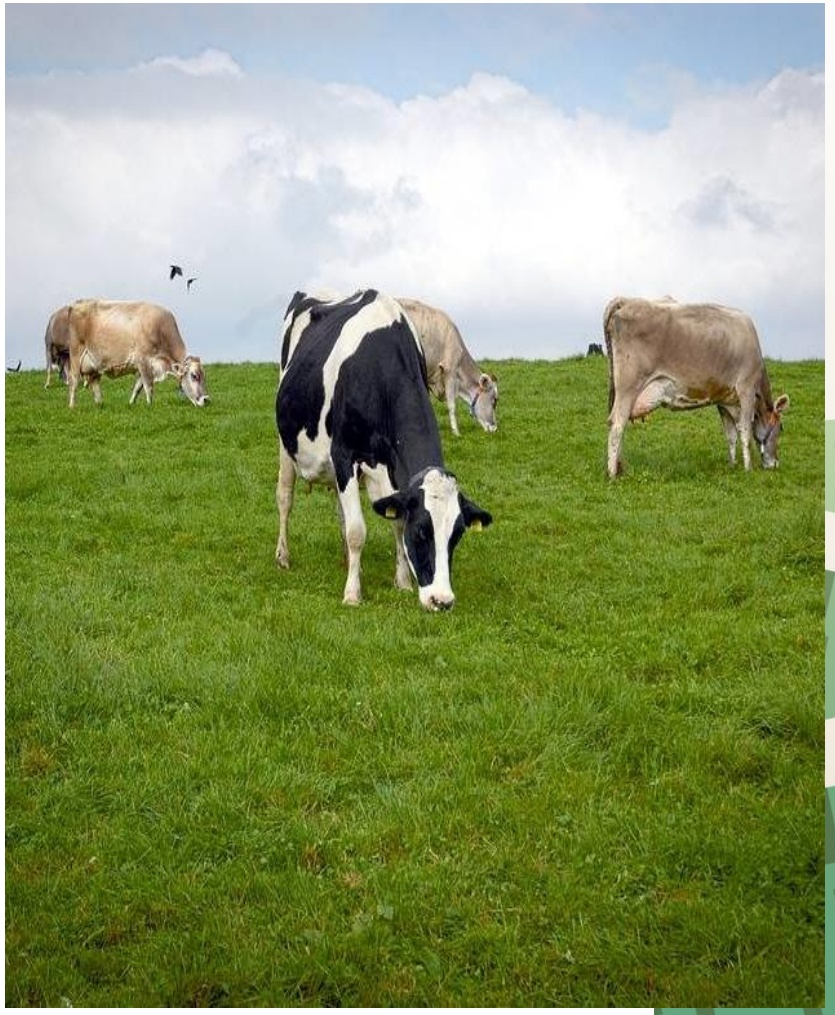
PAPER CARTON

Grass for paper and carton & Bioeconomy

- Ensuring food and nutrition security 
- Reducing dependence on non-renewable resources 
- Mitigating and adapting climate change 
- Strengthening European competitiveness and creating jobs 



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CAP for grasslands

- **M1. Knowledge transfer and information actions**
- **M2. Advisory services, farm management and farm relief services**
- **M4. Investments in physical assets (fences, meadow improvement, irrigation)**
- M5.Restoring agricultural production potential damaged by natural disasters and fostering prevention
- M6. Farm and business development
- M7. Basic services and village renewal in rural areas
- M8. Investments in forest areas (fences).
- M10. Agri-environment-climate
- M11. Organic farming
- M12. Nature 2000 and water framework directive payments
- M13. Payments to areas facing natural or other specific constraints
- M14. Animal welfare
- M15 Forest-environmental and climate services and forest convervation
- M16. Cooperation

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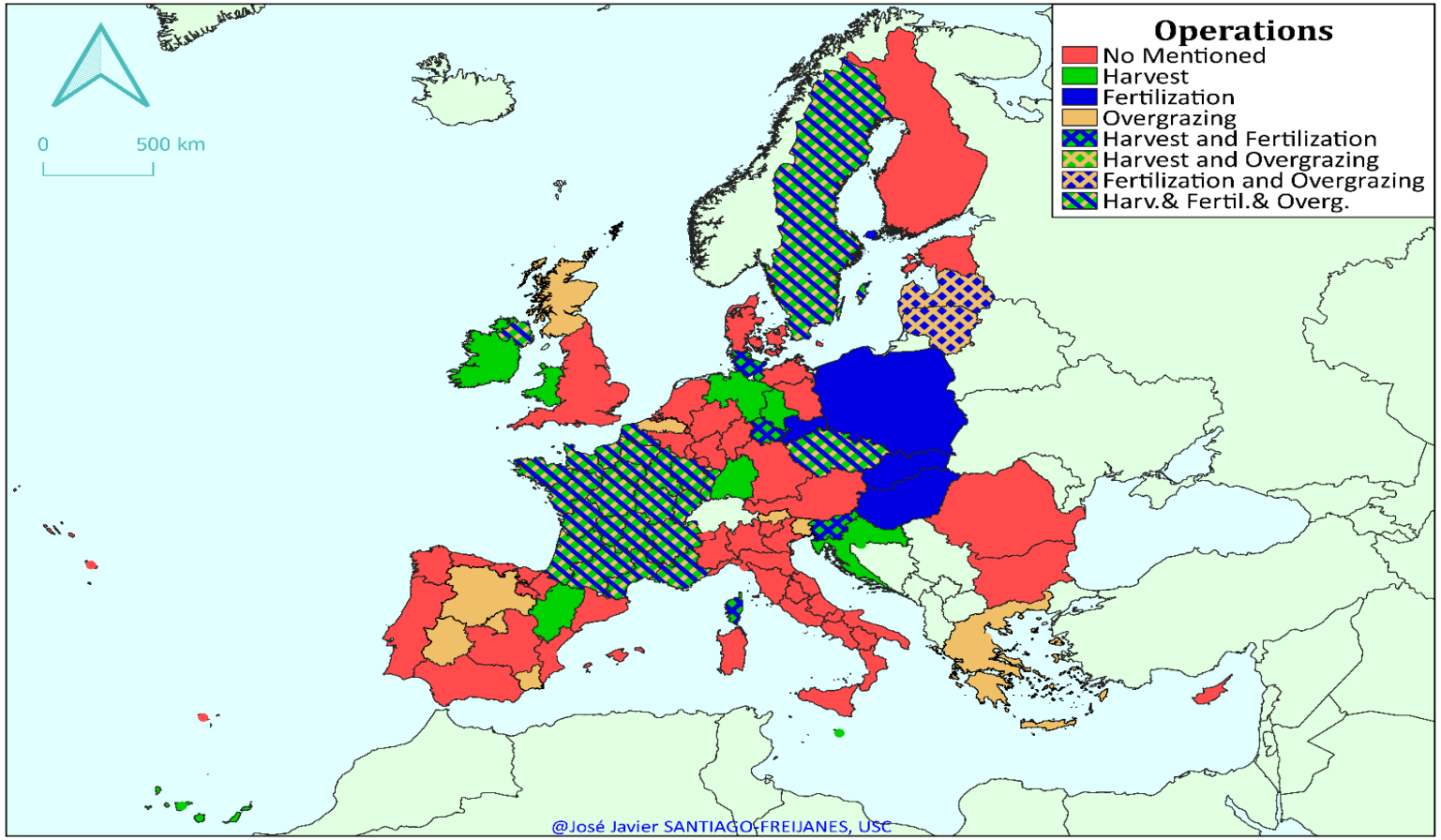
M10. Agri-environment measure



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Renewable gases

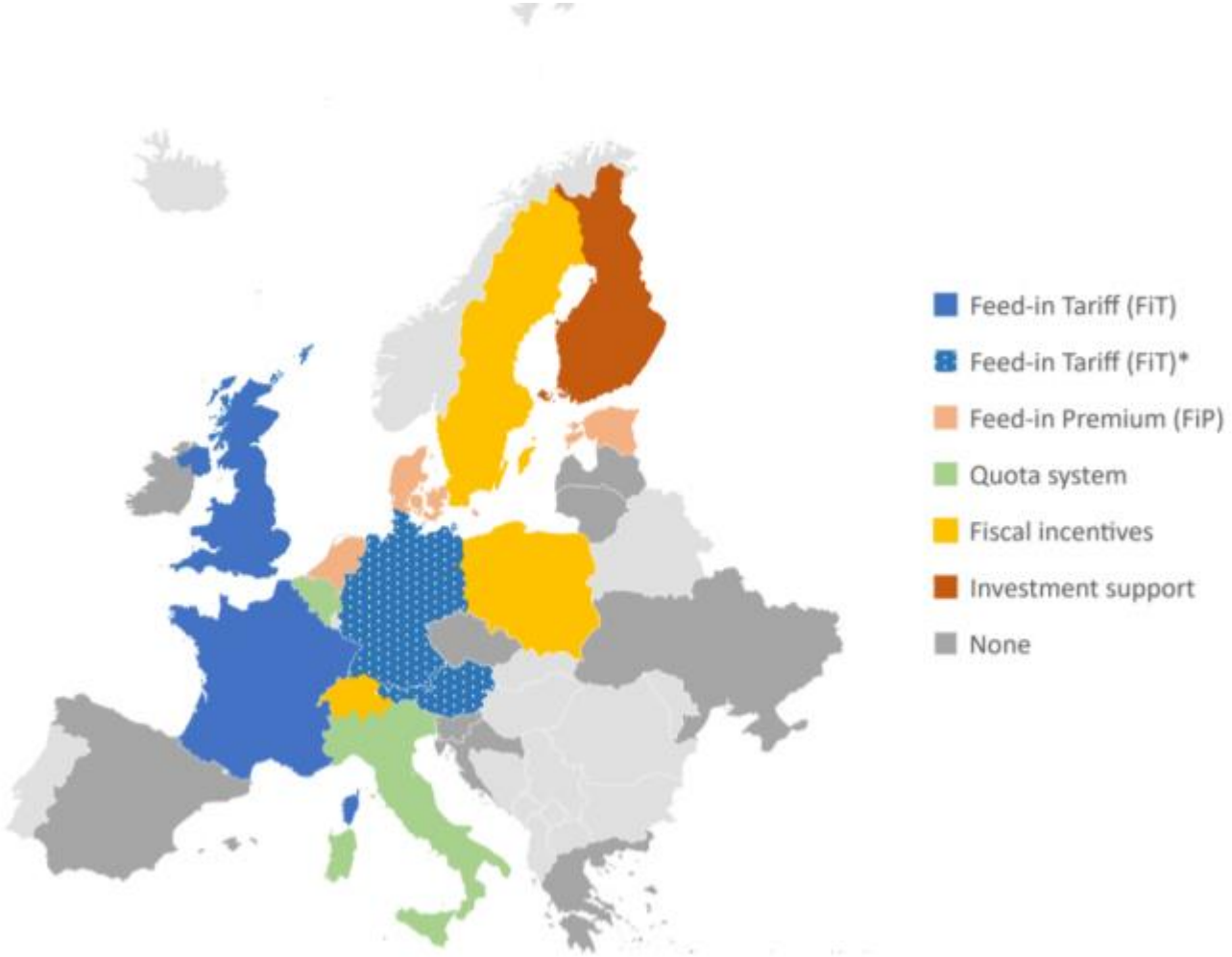

Figure 6: Support schemes in place per country

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CONCLUSIONS

- Grasslands is a broadly available resource in Europe
- Local variability is highly variable
- There are excellent opportunities for grass to fulfill the bioeconomy aims of the European Commission
- CAP promotes grass management investments but not value chains or grass use alternatives infrastructures development in Europe
- Most support is National,increasing differences among countries in Europe when programming alternative uses of grass in Europe

GO-GRASS

Thanks a lot!

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